Amendments to the Claims:

1-57. (canceled)

58. (currently amended) A method for altering the amino acid composition of a vegetative storage protein, said method comprising:

a) introducing amino acid changes into said protein to create an engineered protein, wherein said amino acid changes alter the content of nutritionally essential amino acids in said protein by at least 5%; and

b) ~~determining whether said engineered protein has~~ assessing the conformation of ~~the native protein by binding~~ said engineered protein based on its ability to bind with a set of ~~interacting molecules~~ antibodies capable of binding with the native protein, wherein said ~~interacting molecules~~ antibodies recognize the native conformation of ~~and are proteins that form homodimers or heterodimers with~~ said ~~native~~ protein ~~of interest and wherein said interacting molecules are not antibodies~~.

59. (canceled)

60. (previously presented) The method of Claim 58, wherein said amino acid changes comprise increasing the levels of methionine.

61. (previously presented) The method of Claim 58, wherein said amino acid changes are introduced into predetermined sites.

62. (previously presented) The method of Claim 61, wherein said predetermined sites are determined using secondary structure prediction or homology comparison.

63. (previously presented) The method of Claim 58, wherein said amino acid changes are introduced at random.

64. (previously presented) The method of Claim 63, wherein said amino acid changes are produced by mutagenic PCR or DNA shuffling, wherein said mutagenic PCR or DNA shuffling is optionally used in combination with phage display methodology.

65. (currently amended) The method of Claim 64, wherein the step of assessing the conformation of said engineered protein involves ~~it is determined whether said engineered protein has the conformation of said native protein by~~ filter lift assay or ELISA.

66. (canceled)

67. (currently amended) The method of Claim 58, wherein said amino acid changes increase the content of nutritionally essential amino acids to represent at least ~~10%~~ 8.25% of the total amino acid content of the protein.

68. (currently amended) The method of Claim ~~54~~ 58, wherein said vegetative storage protein is ~~vegetative storage protein~~ VSPβ.

69. (currently amended) A method for altering the amino acid composition of ~~a native protein of interest~~ VSPβ, said method comprising:

a) introducing amino acid changes into VSPβ ~~said protein~~ to create an engineered ~~protein~~ VSPβ having increased nutritional value, wherein said amino acid changes increase levels of at least one nutritionally essential amino acid in the engineered ~~protein~~ VSPβ so that nutritionally essential amino acids are increased to represent at least 5% of the total amino acid content of the engineered ~~protein~~ VSPβ; and

b) ~~determining~~ assessing whether said engineered ~~protein~~ VSPβ has the conformation of the native ~~protein~~ VSPβ based on its ability to bind ~~by binding said engineered protein~~ with native VSPα, VSPβ, or both ~~a set of~~

~~interacting molecules capable of binding with the native protein, wherein said molecules recognize native conformation~~.

70. (canceled)

71. (currently amended) The method of Claim ~~70~~ 58, wherein said antibodies are monoclonal antibodies.

72. (canceled)

73. (canceled)

74. (canceled)

75. (previously presented) The method of Claim 69, wherein at least one of said at least one nutritionally essential amino acid or nutritionally essential amino acids is methionine.

76. (previously presented) The method of Claim 69, wherein said amino acid changes are introduced into predetermined sites.

77. (previously presented) The method of Claim 76, wherein said predetermined sites are determined by secondary structure prediction or homology comparison.

78. (previously presented) The method of Claim 69, wherein said amino acid changes are introduced at random.

79. (previously presented) The method of Claim 78, wherein said amino acid changes are produced by mutagenic PCR or DNA shuffling, wherein said mutagenic PCR or DNA shuffling is optionally used in combination with phage display methodology.

80. (canceled)

81. (canceled)

82. (currently amended) The method of Claim 69, wherein said nutritionally essential amino acids are increased to represent at least ~~10%~~ 8.25% of the total amino acid content of the protein.

83 - 96. (canceled)

97. (currently amended) A method for altering the amino acid composition of a vegetative storage protein, said method comprising:

a) introducing amino acid changes into said protein to create an engineered protein, wherein said amino acid changes alter the amino acid content of said protein by at least 5%; and

b) ~~determining~~ assessing whether said engineered protein has the conformation of a native vegetative storage protein based on its ability to bind ~~by binding~~ with a panel of monoclonal antibodies which recognize the native protein conformation and are capable of binding said native vegetative storage protein.

98. (previously presented) The method of Claim 97, wherein said amino acid changes increase the level of at least one nutritionally essential amino acid in the engineered protein.

99. (previously presented) The method of Claim 97, wherein said amino acid changes comprise substitutions.

100. (previously presented) The method of Claim 98, wherein said amino acid changes comprise increasing the level of methionine.

101. (previously presented) The method of Claim 97, wherein said amino acid changes are introduced into predetermined sites.

102. (previously presented) The method of Claim 101, wherein said predetermined sites are determined by secondary structure prediction or homology comparison.

103. (previously presented) The method of Claim 97, wherein said amino acid changes are introduced at random.

104. (previously presented) The method of Claim 103, wherein said amino acid changes are produced by mutagenic PCR or DNA shuffling, wherein said mutagenic PCR or DNA shuffling is optionally used in combination with phage display methodology.

105. (currently amended) The method of Claim 104, wherein the step of assessing the conformation of said engineered protein involves ~~it is determined whether said engineered protein has the conformation of said native protein by~~ filter lift assay or ELISA.

106 -124. (canceled)

125. (currently amended) The method of claim 97, wherein said amino acid changes alter the amino acid content of said protein by at least ~~10%~~ 8.25%.